

III. REMARKS

A. Status

Claims 1-9 are pending of which claim 1 is independent.

In the Office Action, the specification and claims were objected to for informalities. Office Action at 2-3. Claims 1, 2, 4, 5, 7, 8 and 9 were rejected under 35 U.S.C. § 103(a) as being obvious over Hamann et al. (U.S. Publication No. 2002/0026578 A1, hereinafter “Hamann”) in view of Dare et al. (U.S. Publication No. 2003/0163687, hereinafter “Dare”). *Id.* at 4-11. Claim 3 was rejected under 35 U.S.C. § 103(a) as being obvious over Hamann and Dare in view of Audebert et al. (U.S. Publication No. 2003/0005317, hereinafter “Audebert”). Office Action at 11-12. Claim 6 was rejected under 35 U.S.C. § 103(a) as being obvious over Hamann and Dare in view of Doyle et al. (U.S. Patent No. 6,438,550, hereinafter “Doyle”). Office Action at 12-13.

In this amendment, claims 1, 2, and 4-8 have been amended to overcome the objections and the rejections. Care has been exercised not to introduce new matter.

B. Informalities Are Addressed

1. Specification Informalities Are Addressed

In the Office Action, the specification was objected to because “first service provider” should read “second service provider.” Office Action at 2. Appropriate correction to the specification has been made on page 14. Amendment at 2. Withdrawal of the objection is respectfully requested.

2. Claim Informalities Are Addressed

In the Office Action, claims 1, 2, and 4-7 were objected to because for informalities Office Action at 2-3. Claims 1, 2, and 4-7 have been amended to correct the informalities. Amendment at 3-6. Withdrawal of the objection is respectfully submitted.

C. Claims Are Not Obvious

1. Claims 1, 2, 4, 5, 7, 8, and 9 Are Not Obvious

Claims 1, 2, 4, 5, 7, 8 and 9 were rejected under 35 U.S.C. § 103(a) as being obvious over Hamann in view of Dare. Office Action at 4-13. The rejection is respectfully traversed for the following reasons.

As disclosed, the chain of certificates hierarchically includes an (uppermost) certificate authority (50₁) on which a service provider 40₂ relies, a smart card and a (one or more) secondary certificate authority 50₂. In other words, a first certificate authority 50₁ issues a certificate to the smart card (IC card), then the smart card issues a certificate to a second certificate authority 50₂, and the certificate authority 50₂ issues a certificate by which a service is provided to the smart card. Application at 3:25-4:24; Fig. 10; 18:21-20:18. In such a certificate chain, by revoking the certificate issued to the smart card from the certificate authority 50₁, the certificate issued by the certificate authority 50₂ is also revoked. Moreover, this subject matter provides a more advantageous result when a plurality of different service providers 40₂ rely on different certificate authorities 50₂, respectively, and a smart card issues a certificate to each certificate authority 50₂. *Id.* at 4:7-42. Claim 1 has been amended to more clearly recite aspects of this disclosed hierarchical arrangement to differentiate over the proposed art combinations, as discussed below.

The first cited reference, Hamann, teaches a security token and method for secure usage of digital certificates and related keys on a security token. Hamann at Abstract. A root certificate is used during initialization to transfer the certified root public key and its attributes into the data structure of the security token. *Id.*

The second cited reference, Dare, teaches a technique relating to key certification in a public key infrastructure. Dare at Abstract. The infrastructure has a network formed of nodes having a private and public key pair. *Id.* The invention provides a chain of digital certificates across the node network. *Id.*

Combining Hamann and Dare does not render the present claims obvious, as alleged by the Office Action. Office Action at 4-7.

First, Hamann does not teach that the certificate authority stores its own public and private key, *as the Office Action admits*. *Id.* at 5. Instead, the Office Action attempts to explain: “however, it is an *inherited* [sic] feature of CA that it always have [sic] storage unit which stores its own private key and a corresponding public key, from which the private key is used to generate user certification...” *Id* (emphasis added). Applicant respectfully disagrees, at the outset being unsure of the meaning of “inherited.” If, however, the Examiner means “inherent,” Applicant still disagrees. To be inherent, the result must be inevitable *each and every time*. The Office Action offers no support for its conclusory statement. As such, Hamann does not teach that feature.

Second, independent claim 1 is amended to include the limitation: “...said certificate issuing unit of said smart card comprises a third certificate generating unit which issues the third certificate for said third public key....” Amendment at 3-4. This third certificate is one stored by the second certificate authority. Neither the Hamann or Dare reference teaches the third

certificate issuing feature of the smart card. Thus, no combination of Hamann or Dare will result in a system that meets the “third key” limitations.

As such, the combination of Hamann and Dare does not render independent claim 1 obvious. Applicant respectfully submits that claim 1 is in condition for allowance.

2. Claim 3 Is Not Obvious

In the Office Action, claim 3 was rejected as being obvious over Hamann and Dare in view of Audebert. However, a dependent claim cannot be obvious if the independent claim from which it depends is not obvious. As discussed above, Applicants respectfully submit that claim 1 is not obvious. Claim 3 depends from claim 1. Therefore, claim 3 is also not anticipated.

3. Claim 6 Is Not Obvious

In the Office Action, claim 6 was rejected under 35 U.S.C. § 103(a) as being obvious over Hamann and Dare in view of Doyle. Of course, as mentioned above, a dependent claim cannot be obvious if the independent claim from which it depends is not obvious. As discussed above, Applicants respectfully submit that claim 1 is not obvious. Claim 6 depends from claim 1. Therefore, claim 6 is also not anticipated.

IV. CONCLUSION

In conclusion, Applicant respectfully submits that the claims are now in condition for allowance.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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